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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Cedric Con-Carolis

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08/09/2006

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EXAMINER

WANG, QUAN ZHEN

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/655,209	CON-CAROLIS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Quan-Zhen Wang	2613	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 April 2006 and 22 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3, 4, 6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-4, 6, and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed on May 22, 2006 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 25, 2006 has been entered.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "photonic slot"; "individual wavelength switching node (ISWN)"; "individual component channels"; and "fractional delay" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 3-4, 6, and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites newly added limitations of "photonic slot"; "individual wavelength switching nodes (ISWN)"; "individual component channels"; and "fractional delay". These newly added limitations are not supported by the originally filed specification.

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5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 3-4, 6, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 includes the phrase "and the like" in line 15. The phrase "and the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "and the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim 1 recites the limitations of "... (b) said ISWN separates the wavelength channels within a received photonic slot into individual component channels; (c) said individual component channels being switched to an output port singly unless two or more have different wavelengths, in which case the channels are merged into one slot". However, it is not clear what the cited limitations mean. Since the "ISWN separates the wavelength channels within a received photonic slot into individual component channels", it is not clearly what it means by "unless two or more have different wavelengths".

Claim recites the limitations of "... (e) said TDM frames being assigned bandwidths such that each connection is assigned a wavelength channel and a timeslot for routing from a source node to a destination node". However, it is not clear what the cited limitations mean. It is not clear how the assignment of the bandwidth of the TDM frame would affect the routing of a timeslot from a source node to a destination node.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 3-4, 6, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Boroditsky et al. (U.S. Patent Application Publication US 2002/0071153 A1).

Regarding claim 1, as it is understood in view of the above 112 problems, Boroditsky teaches an optical communication system (fig. 3) having switch nodes (fig. 3, nodes 205-1, 205-2, ..., 205-4) and add/drop nodes (fig. 3, node 205-I), characterized in that data packets sharing a common subnetwork destination are aggregated to form a photonic slot (paragraphs 0007 0009) that is individually routed to reach said subnetwork destination; wherein: (a) individual wavelength switching nodes (fig. 3, node 205-I) provide switching of at least one wavelength within a time slot without affecting other wavelengths (fig. 24); (b) said ISWN separates the wavelength channels within a received photonic slot into individual component channels (fig. 12, the bottom OUT signals); (c) the individual component channels being switched to an output port (for example, see fig. 15B); (d) all time division multiplexed (TDM) repetitive frames are synchronized at input ports of ISWN by utilizing synchronizing means such as fractional

delay (fig. 3, the TDM frames labeled "DROP" and "ADD"); (e) the TDM frame having bandwidth so that each connection can be assigned a wavelength channel and timeslot for routing from a source node to destination node (paragraphs 0081-0084).

Regarding claim 3, it is inherent that the data packets transmitted as optical bursts have rates lower than that of transmission rates between nodes.

Regarding claims 4 and 6, Boroditsky further teaches that the switch nodes are photonic and route a repetitive frame in its entirety between input and output ports of a switch node (paragraphs 0055 and 0056).

Regarding claim 8, Boroditsky further teaches that a plurality of transmission media (fig. 3, transmission media between two adjacent nodes, for example, 205-2 and 205-3; 205-3 and 205-4) carry a plurality of waveslots having identical wavelengths and timeslots propagating on separate transmission media (paragraphs 0055-0056).

### ***Response to Arguments***

9. Applicant's arguments filed on April 25, 2006 have been fully considered but they are not persuasive.

As it is acknowledged by the applicants that Boroditsky discloses: "1. Combines packet switched (TDM) and WDM schemes in a two dimensional multiplexing scheme". "2. Employs composite packets generated locally by tunable laser and 'stacked' by passing packets through an array of circulators and delay lines to cause synchronization of packets into timeslots. Each timeslot containing composite packets that may passed through a given switch node or be dropped for further distribution to users connected to the switch node using WDM or other techniques. 3. Describes how 'Transparent

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Bypass' may occur where a selected portion of a composite packet may be dropped at a switch node without affecting the remaining portion which passes through the switch node unaltered. 4. Employs photonic delay lines to achieve 'Time-slot-interchange. 5. Employs circulators and optical delay lines to allow composite packets that pass through a node to be merged with composite packets that are generated at the node by a tunable source."

Applicant argues that "Thus, unlike the present invention, which allows individual wavelengths to be switched independently of each other, the Boroditsky patent disclosure relates exclusively to Photonic Slot Routing wherein composite packets are made up of several fixed length packets that are synchronized in a single timeslot but at different wavelengths". However, Applicant also admits that "Boroditsky et al. anticipate a scheme wherein 'Transparent Bypass' may occur to allow selected wavelengths in a composite packet to be dropped without affecting the remaining portion." As a matter of fact, Boroditsky discloses: "Transparent bypass is a technique that allows the addition of and/or dropping of a portion of a composite packet without affecting the balance of the composite packet. Any node can be adding or dropping a portion of a composite packet while leaving the remainder of the composite packet intact. In the prior art, wavelengths not dropped in a subtending ring would have to travel all the way around the subtending ring incurring all of the associated losses." (Paragraph 0080) Any one skilled in the art would understand that an individual wavelength is "a portion of a composite packet". Clearly the system of Boroditsky anticipates the claimed invention.



***Conclusion***


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hui Zang et al., ("Photonic slot routing in all-optical WDM mesh networks", 1999, GLOBECOM'99 Volume 2, pages 1449-1453) disclose a method of photonic slot routing in all-optical WDM mesh networks.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw  
7/23/2006

  
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